

MARITIME HERITAGE MINNESOTA

Ann Merriman
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Minnesota Small Craft Projects Series

Minnesota Alumina Craft Runabout War Canoe Analysis and 3D Scanning Project Report



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Ann Merriman, Christopher Olson, and Maritime Heritage Minnesota

Acknowledgments

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Maritime Heritage Minnesota



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Introduction

Maritime Heritage Minnesota conducted the Minnesota Aluma Craft Runabout *War Canoe* Analysis and 3D Scanning Project (MACRWC) in February 2022. The purpose of the MACRWC Project was to document, 3D scan, and conduct historical research of one Minnesota-produced aluminum watercraft. MHM chose to document a rare watercraft produced in Minneapolis in Hennepin County.

Research Design and Methodology

Watercraft are held in several Minnesota museums, historical societies, and collections - boats that were constructed in the state. Often the general public, scholars, and students are unaware of the significance of small and seemingly mundane historic vessels preserved in these collections. Drawing upon nautical archaeological and maritime historical knowledge based on fieldwork and research, MHM chose a rare Aluma Craft Runabout to investigate during the MACRWC Project. This vessel met particular criteria: she is Minnesota-designed and built, her runabout design in aluminum is interesting, she is rare, and her significance to the maritime history of the state has not been widely recognized or understood.

The 3D scanning process - using hand-held scanners attached to iPads - is a tool MHM has utilized since late 2016. The files produced by the scanners were used to render 3D models using mesh software. To date, MHM has documented 22 other Minnesota watercraft using 3D scanning:

- * Big Swan Dugout Canoe dated (AD 969-1225)
- * Civil War Casualty Charles Ichabod Clark's *The Constitution Old Ironsides* (1858)
- * Decorated Ojibwe Birch Bark Canoe (1890-1899)
- * Tukantoiciya's Dakota Birch Bark Canoe (1892-1895)
- * Arthur Dyer's Racing Sloop *Onawa* (1893)
- * Fisherman's Friend by Moore Boat Works or Ramaley Boat Works (1910-1935)
- * Ramaley Boat Company Fisherman's Friend (~1913)
- * Alexandria Boat Works Lady of the Lakes Model Outboard Motor Boat (~1930)
- * E. Weston Farmer's Wayzata Boat Building Company Motor Boat (1931-1933)
- * Parker's Prairie Boat Works Duck Boat (1933) by John Freet
- * Joseph Dingle Boat Works Outboard Motorboat (Early 1930s)
- * Mille Lacs Indian Trading Post Boat Works Motorboat (~1935)
- * Larson Boat Works Senior Fisherman's Choice Outboard Motor Boat (Mid-1930s)
- * Ray Thompson's Thompson's Boat House Motor Boat #22 from Waseca (1940-1959)
- * Cokato Boat Works Outboard Moto Boat (1950-1952)
- * Crona Craft Outboard Runabout 2 from Tonka Bay Boat Works (1955-1957)
- * Crona Craft Outboard Runabout 1 from Tonka Bay Boat Works (1956)
- * Chrome Fiberglass Herter's Model St. Lawrence Outboard Motor Boat (1956)
- * Larson Boat Works All-American 165 Runabout (1959)
- * Taft Marine Woodcraft Company Kit Green Hornet Ice Boat (~1960)

- * Hugo's Boat Works Sportsman G16 Runabout (1968) by Hugo and Janet Gross
- * Wooden Outboard Runabout Homebuild (1955-1975)

Additionally, MHM extensively used this 3D scanning system during a Phase I Terrestrial Archaeological Reconnaissance Project on Lake Minnetonka's Big Island; dozens of archaeological features were documented for their preservation and conservation.

Aluma Craft History

The Minneapolis-based Flour City Ornamental Works was founded in 1893. By 1900, the company's name was modified to Flour City Ornamental Iron Works, and again in 1916, it became the Flour City Ornamental Iron Company (FCOIC). The business remained intact under that name until 1966. During the first half of the 20th Century, the FCOIC produced bronze and iron architectural fittings in addition to 'bronze memorial tablets'. During World War II, FCOIC re-tooled its manufacturing processes for the production of military parts and equipment such as cowlings for Thunderbolt fighters. The firm employed United States Employment Service War Manpower Commission-referred loft layout men, aircraft draftsmen and inspectors, and quality control supervisors - a large work force. The end of the War brought inventory shortages for many Twin Cities manufacturers, along with strikes of steel production workers that led the FCOIC president to lament the company had "not a pleasant outlook. Our inventories are way down. It's going to keep us from getting into full production. Much of our new development is dependent upon other shops and sub-contractors". To compare, before the War, FCOIC employed 600 workers; by early 1946 that number was down to 200 employees. The firm was set to shift from military contracts to the fulfillment of a backlog of orders from the general public (*Minneapolis Daily Star* 1925; *Minneapolis Morning Tribune* 1944; *Minneapolis Star-Journal* 1944, 1946a; *Minneapolis Tribune* 1946a).

(*Minneapolis City Directory* 1894, 1153; *Minneapolis Sunday Tribune* 1895; *Minneapolis Daily Star* 1925; *Minneapolis Star-Journal* 1944)



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Architectural and Ornamental
Iron, Wire and Brass Works.

... Bank and Office Fixtures in Latest Designs and Finish ...

**IRON AND WIRE RAILINGS
AND FENCES.**

Elevator Enclosures, Metal Cars, Steel Grille Work, Iron Stairs, etc. Special Attention to
Artistic Wrought Iron. Designs and Estimates Cheerfully Furnished.



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ORNAMENTAL WORKS.**

Manufacturers Wire, Iron and Steel
Grille Work, Bank and Of-
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**THE FLOUR CITY
ORNAMENTAL IRON
COMPANY**

ORNAMENTAL
BRONZE AND IRON
FOR
BUILDINGS

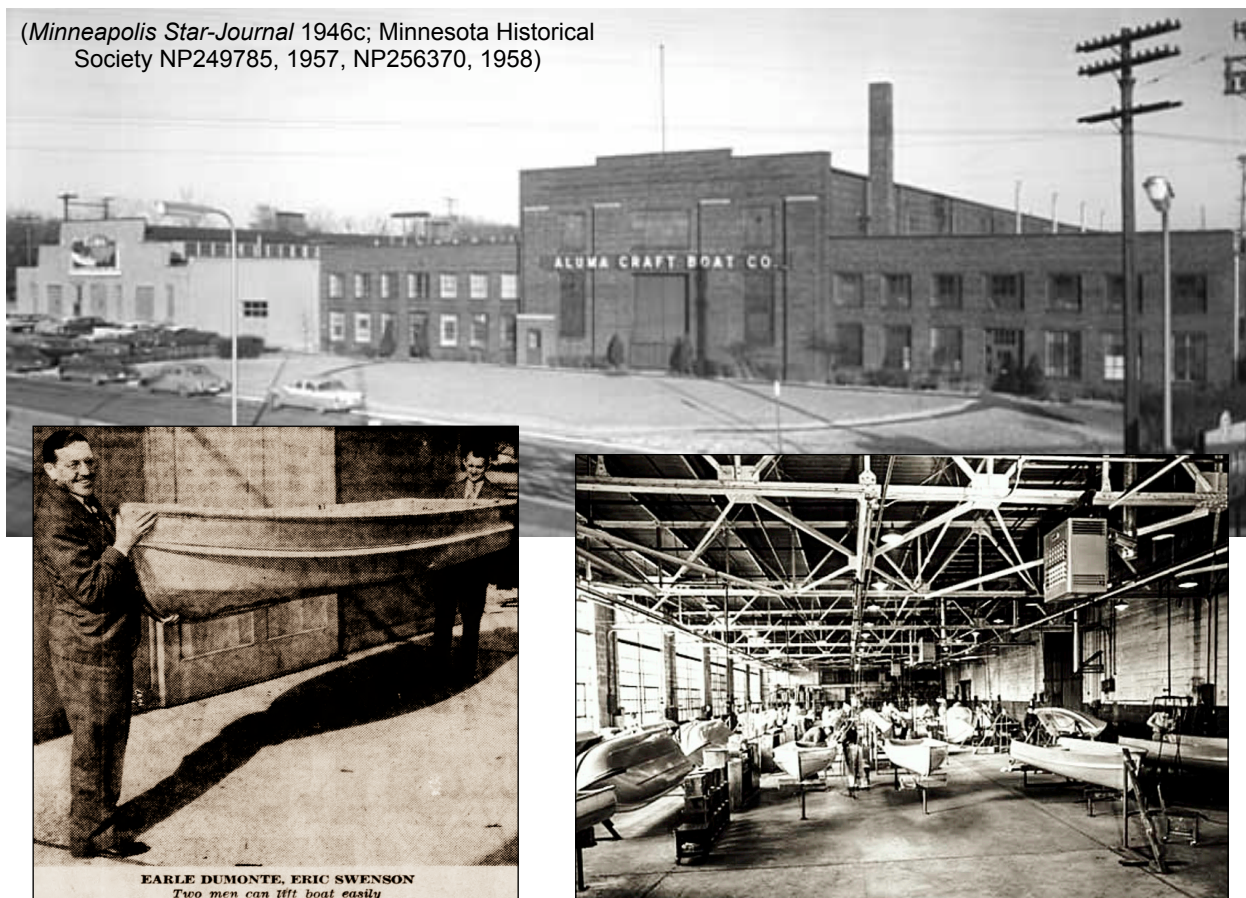
Bronze Memorial Tablets
2837 27th Ave. S. Drexel 8870



THIS HUGE ENGINE COWLING of a navy Thunderbolt fighter plane makes an effective frame for a picture of WAVES Ensign. Holes Merry, who sits demurely inside it at the Production for Victory Show at Minneapolis auditorium, where it is on display. Ensign Merry's brother, Lt. Frank W. Merry, is pilot of a Thunderbolt. Cowling like this one are being manufactured in Minneapolis by Flour City Ornamental Iron Co.

Aluma Craft boats were designed by Sweden native Erich Swenson, who arrived in Minneapolis in 1924. He found work with Joseph Dingle Boat Works in St. Paul, a well-known and respected firm known for their quality racing boats and runabouts, on down to their small wooden family watercraft and rowboats. Swenson was a proponent of standardization in small watercraft construction throughout the industry. To that end, he worked with other national boat manufacturers to create uniform guidelines for floatation systems, allowable horsepower, and capacity limits. Additionally, the nationwide Outboard Boating Club of America was founded under Swenson's leadership. Swenson's first model was a 14.00-foot open fishing boat weighing 110 pounds. Company testing of the boats determined they would move safely through 1.00 inch of ice, were salt water-worthy, and built-in buoyancy tanks within the boat's benches could accommodate 6-8 people. Almost immediately, the company had close to \$2 million worth of boat orders with the projection of 40 boats produced each day during their first 30 days; a goal of 100 boats manufactured daily was projected. Also planned were different outboard boat models including car-tops, runabouts, and duck boats. Aluma Craft boats, along with Champion Outboards, were highlighted at the downtown Radisson Hotel and then at the Northwest Sportsmen's Show in mid-April 1946. The following week, the company featured a reaction to the new watercraft from the Sportsmen's Show claiming they are "the sensation of the boat world". By late May 1946, Aluma Craft boats were being sold by St. Cloud Motor & Tire Company - exclusively - in that city. The following year, the St. Cloud Motor & Tire Company continued to sell the "Queen of the Waterways" Aluma Craft boats and added Champion outboard motors to their offerings (*Minneapolis Star-Journal* 1946c-d; *Minneapolis Sunday Tribune* 1946b; *St. Cloud Daily Times* 1946, 1947; Sowden 2022).

(*Minneapolis Star-Journal* 1946c; Minnesota Historical Society NP249785, 1957, NP256370, 1958)



Dry-Always ready Fast-Always steady



ALUMACraft

Genuine Erich Swenson designs assure easy planing...top speeds...smooth performance...stable ride. Fine Aluma Craft construction assures extra strength...positive flotation...long life. Always ready...no work...no painting. Never soaks up water...never dries out and leaks. Easy to own on easy terms. Select from 18 models, the right boat or canoe for your use.

ALUMA CRAFT BOAT COMPANY
2627 27th Avenue South, Minneapolis, Minnesota

Select **ALUMA CRAFT**
FOR LIGHT WEIGHT, SAFETY
and STURDY CONSTRUCTION



(Aluma Craft 1946; Popular Science 1956, 88)

(Detroit Free Press 1956)





Aluma Craft Displays in 1957 and 1958 (Minnesota Historical Society NP 252507, NP 242767)

DUNHAM'S for BOATS

Boats of All Kinds—Famous Makes Such as
DUNPHY • PEN-YAN • ALUMA-CRAFT • ARKANSAWS
ALUMA-CRAFT 12 FOOTER ALUMA-CRAFT CANOE



Model E. Fast, sturdy, dependable. For 3 to 4 persons. \$35 Down **\$269**



All-aluminum 15-ft. Virtually unsinkable. Full 3-ft. wide amidships. **\$239**

NEW 'DEEP-C' ALUMA-CRAFT

A big boat that takes a motor from 25 to 50 H.P., with ease. Created especially for rough weather. A boat of unusual design and construction that offers unparalleled protection. Trade-in your old boat. **\$694**
\$100 DOWN, F.O.B.

ARKANSAS PRAM



Little Fisherman 9-footer. Light, handy, only 70 lbs. For 8½ h.p. or less. **\$142**

PAY ONLY 10% DOWN
Trade Your Boat or Motor

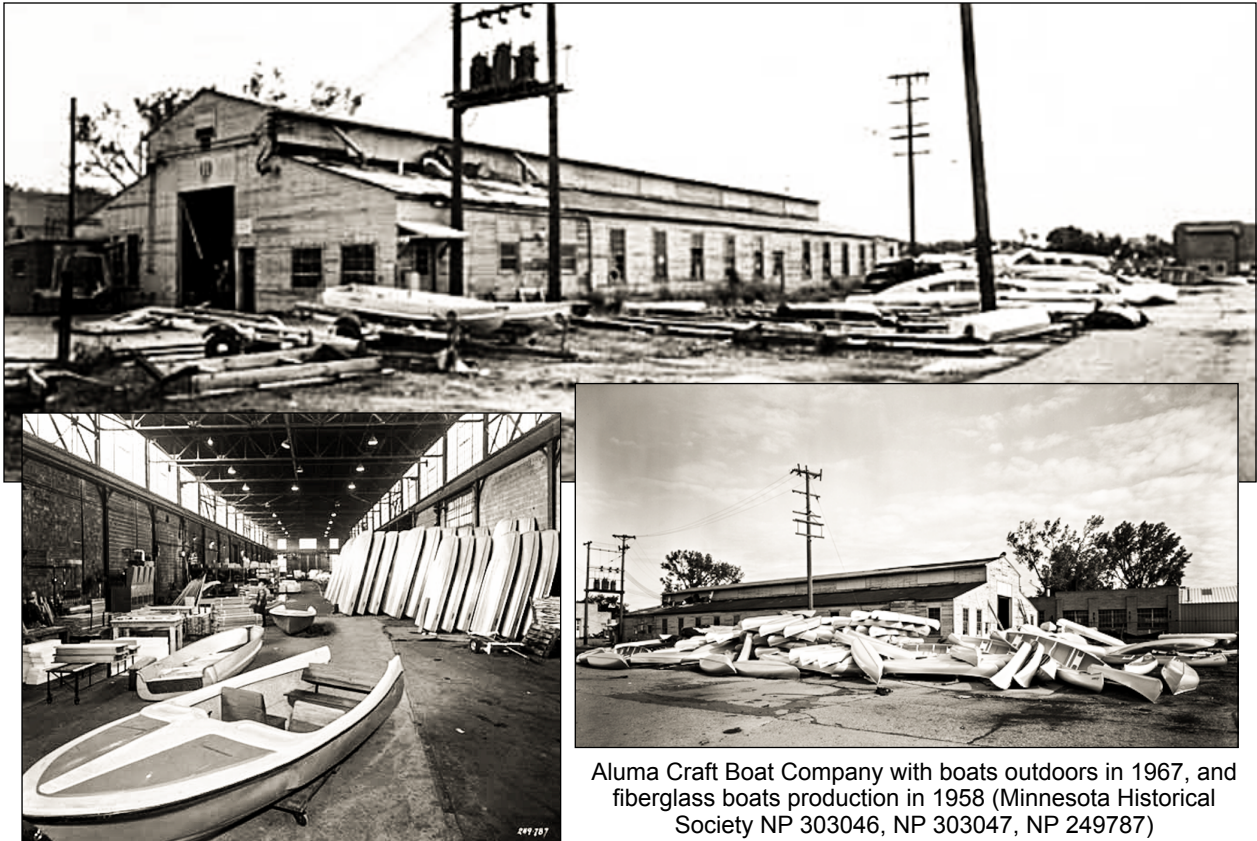
CRUISER CUSHIONS
12x30 \$6.95
12x36 7.95
12x48 8.95
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SAVE \$130.00 ON ALUMA-CRAFT 16' MERRY-M
Reg. \$1025 NOW **\$895**

SAVE \$76.00 ON PENN-YAN SWIFT RUNABOUT
Reg. \$475.00 NOW **\$399**

We Have Many Good USED BOATS AND MOTORS FOR SALE

In 1958, Aluma Craft's production moved from South Minneapolis to Northeast Minneapolis, into a much larger manufacturing facility. Additionally, the company began the production of fiberglass boats under the Aluma Glass brand, and offered 2 models during its first year of manufacture. In November 1960, FCOIC was purchased by Cleveland-based Hupp Corporation, and functioned as a subsidiary of the company, still manufacturing Aluma Craft boats in its Minneapolis factory. In August 1962, Hupp sold the Aluma Craft Boat Division to Alpex Corporation of Rochester, NY; Alpex manufactured light sailboats. Aluma Craft again remained in Minneapolis under the same management and its 200 experienced employees. Earnings were reported to be \$50 million and 100,000+ boats were constructed since 1946. In November 1962, Aluma Craft announced the company had begun producing boat trailers for national distribution. Additionally, the Aluma Glass line would be known as Alpex, and additional fiberglass boats were under production. By 1972, the Aluma Craft moved to St. Peter, Minnesota, where the boats are still manufactured (Aluma Craft Boat Company 1958, 24-25; *Minneapolis Morning Tribune* 1962; *Minneapolis Star* 1960, 1962a-b; Research Division, Minnesota Department of Economic Development 1972, P-133).



Aluma Craft Boat Company with boats outdoors in 1967, and fiberglass boats production in 1958 (Minnesota Historical Society NP 303046, NP 303047, NP 249787)

Aluma Craft Merry M-16

(Aluma Craft 1956)

ALUMACraft
merry "M"
RUNABOUT

specifications

Length (over-all)	16'6"
Width amidships	56"
Width at transom	52"
Depth amidships	21"
Depth forward	27"
Depth at stern	20"
Transom depth for motor	15"
Splash rails	full length
Styrofoam flotation	
Bottom design	round
Weight	295 lbs.*
OBC approved for outboard motors up to	30 h.p.

***MERRY "M-14"**

Length	14'
Weight	250 lbs.
Other specifications same as "M-16"	

With its dashing appearance, smart, clean lines, beautiful finish and marvelous performance, the Merry "M-16" has everything. Fast and racy, its center of gravity is low. Has complete decking, polished coaming caps and gunwales. Colorful Kapok Coast Guard approved lifesaver pillows and upholstered back-rests. Under-deck leg room is generous for comfort. Aqueduct transom keeps oil and gas drip-

page outside of hull and prevents following waves from washing in.

A luxury fitted Runabout built for style, pleasure and performance. Read construction details on pages 16, 17 and 18.

MODEL MERRY "M-14"

Exactly the same boat as the "M-16" but 2 feet shorter for those who want more speed and less weight. Handles a 30 horsepower motor and is tops in performance at all times.

VERN C. RIPPEN CO.

PROUDLY PRESENTS THE
FIRST ALL METAL RUNABOUT

by ALUMACraft



This new model of the Aluma Craft is a beautiful, sleek, racy model—rides like a thoroughbred—never paint, scrape or caulk it either—you'll love it!

SEE IT SOON

We Carry a Complete Line of

ALUMA CRAFT BOATS	EVINRUDE MOTORS	JEFFY TRAILERS
All 1954 models now on display—a model to suit your taste and budget.	See the new Quiet Evinrude demonstrated. 3-7½-15 and 25 H.P. models.	Effortless loading and unloading of a boat with the new "feather control".

Most Complete Stock of Evinrude Parts in the Northwest
We are the authorized Evinrude Service Station for the Northwest. Complete stock of parts. Our Service Dept. employs only factory trained personnel.

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Largest Marine Showroom in the Northwest

ALUMA CRAFT MERRY-M—40% Off



FACTORY CLOSEOUT

- 56" WIDTH.
- 27" DEPTH FORWARD.
- UP TO 35 H.P.
- TWO FLOTATION TANKS.
- COMPLETELY UPHOLSTERED.
- POLISHED COAMINGS AND GUN- WALES.
- CANNOT RUST, ROT, SOAK UP WATER OR DRY OUT AND LEAK.
- FAST AND STABLE, 14 AND 16 FT. LENGTHS. LIMITED QUANTITY.

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- DUNPHY BOATS
- ALUMA CRAFT BOATS
- IDEAL AERO BOATS
- TEE-NEE & SPEEDWAY TRAILERS
- STANDARD STEEL DOCKS
- TROJAN BOATS
- PIPESTONE BOATS

(Marshfield News Herald 1954;
Minneapolis Star 1958a-
b; Minneapolis Sunday Tribune 1958;
Minneapolis Sunday Tribune Picture Magazine 1954, 12)



ALUMA-CRAFT BOATS

Queen of the Waterways

All models available now, including the "Merry M. Runabout"...

OBC Certified
For 25 H. P. Motor **\$748**
F. O. B. Factory

7 DAY BOAT SALE!

Elmer N. Olson's 15 consecutive years of retailing in the Twin Cities provides him with the "know-how" to give you a deal no other dealer can match!



EXTRA SPECIAL 40% OFF

ALUMA CRAFT MERRY-M!

FACTORY CLOSEOUT
DISCONTINUED MODEL

- 56" Width
- 27" Depth Forward
- Up to 35 H.P.
- Completely Upholstered
- Polished Coamings and Gunwales
- Two Flotation Tanks
- Cannot Rust, Rot, Soak Up Water or Dry Out and Leak
- Fast and Stable, 14 and 16 Ft. Lengths. Limited Quantity

ONE WEEK ONLY!

WITHOUT RESERVATION WE SAY:
"You'll get the buy of your life on a New Boat TODAY!"

- We must sell a minimum of 50 boats in 7 days.
- 50 Boats in all models, all colors for immediate delivery!
- Sky-high Trade-in allowances!

Every Salesman has been alerted to submit any offer! You may be surprised to hear the Sales Manager say you've bought yourself a boat!

BRING YOUR OLD BOAT, ETC. USE IT FOR DOWN PAYMENT. YOU'LL BE GLAD YOU DID!

SAVE NOW! We are closing out our standard steel dock displays at 500 So. 11th St. and Wayzata Service Now or Next Spring!

Save 25%


- MOTOR COVERS
- LIFE JACKETS
- WATER SKIS
- CUSHIONS
- TOW ROPES

SPECIAL
100 Ft. of Anchor Rope... **77¢**

Headquarters for All Fishing Boats & Motors

Elmer N. Olson Co.
EST. 1922
500 SO. 11TH ST. OPEN MONDAY THURSDAY AND FRIDAY EVENINGS
Convenient Downtown Location **FE 2-8931**

IT'S HERE! ELMER'S AMAZING SUPER TRADE-IN SALE!



EXTRA SPECIAL 40% OFF

ALUMA CRAFT MERRY-M!

FACTORY CLOSE-OUT
DISCONTINUED MODEL

- 56" Width
- 27" Depth Forward
- Up to 35 H.P.
- Completely Upholstered
- Polished Coamings and Gunwales
- Two Flotation Tanks
- Cannot Rust, Rot, Soak Up Water or Dry Out and Leak
- Fast and Stable, 14 and 16 Ft. Lengths. Limited Quantity

LAST THREE DAYS

WITHOUT RESERVATION WE SAY:
"You'll get the buy of Your life on a New Boat TODAY!"

- We must sell a minimum of 20 boats in 3 days.
- 50 Boats in all models, all colors for immediate delivery!
- Sky-high Trade-in allowances!

Every Salesman has been alerted to submit any offer! You may be surprised to hear the Sales Manager say you've bought yourself a boat!

BRING YOUR OLD BOAT, ETC. USE IT FOR DOWN PAYMENT. YOU'LL BE GLAD YOU DID!

SAVE NOW! We are closing out our standard steel dock displays at 500 So. 11th St. and Wayzata Service Now or Next Spring!

Save 25%

- MOTOR COVERS
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- WATER SKIS
- CUSHIONS
- TOW ROPES

SPECIAL
100 Ft. of Anchor Rope... **77¢**

Headquarters for All Fishing Boats & Motors

Headquarters for:

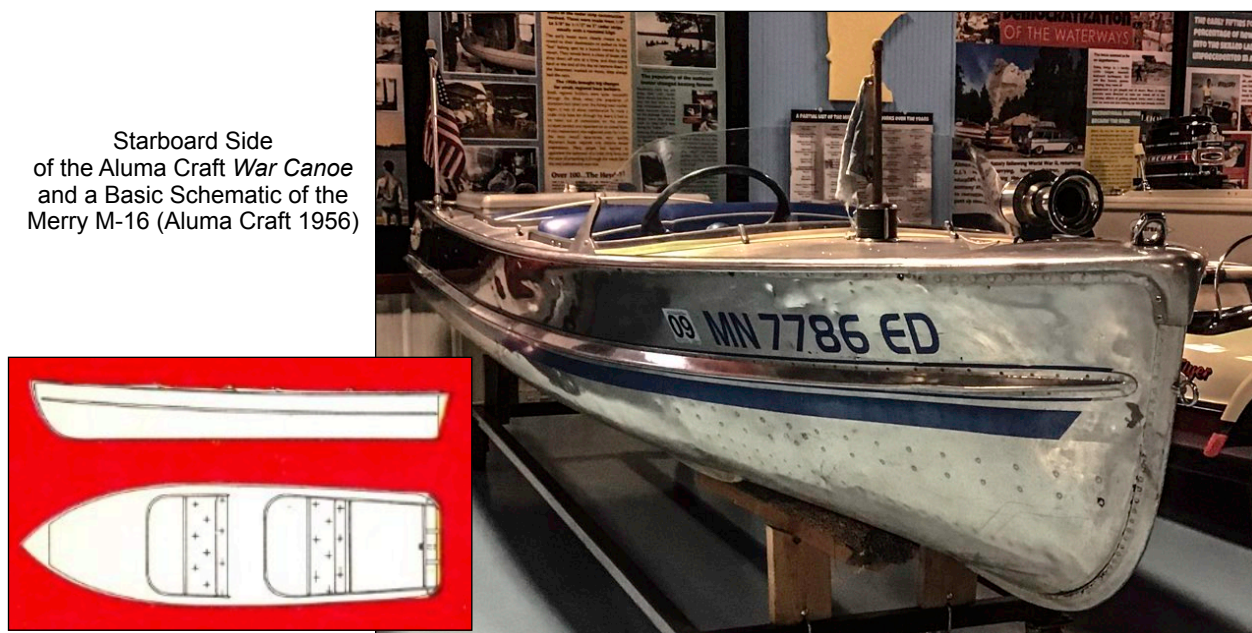
- JOHNSON MOTORS
- ALUMA CRAFT
- IDEAL AERO BOATS
- TEE-NEE AND SPEEDWAY TRAILERS
- STANDARD STEEL DOCKS
- DUNPHY
- PIPESTONE
- TROJAN

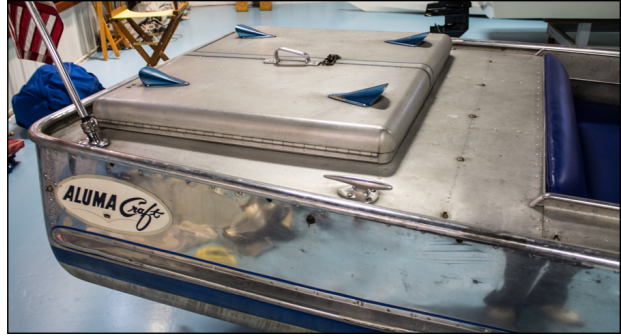
Minnesota Aluma Craft Runabout *War Canoe* Analysis and 3D Scanning Results

Aluma Craft Merry M-16 Model *War Canoe* 1955 Legacy of the Lakes Museum, Alexandria, MN

The Aluma Craft Merry M-16 Outboard model was manufactured during the years 1955 and 1956; *War Canoe* is a 1955 model. Additionally, a smaller sister - the Merry M-14 - was offered between 1954-1956. Sixteen feet long, the aluminum Merry M-16 is 56.00 inches at her widest amidships, and has a 52.00 inch transom. She was rated for a 30 HP outboard motor and was designed with 2 cockpits. In company brochures, the steering wheel was placed in the aft cockpit; *War Canoe* is steered from her forward cockpit. Further, *War Canoe* was modified in her past to carry a 30 HP Crosley brand inboard motor, placed into her aft hold that originally acted as the outboard motor well. Two hatch covers were fabricated to conceal the motor when they are closed and they have 4 blue air scoops affixed to them - 2 facing forward and 2 facing aft. The boat's gunwale is raised around the entire vessel; amidships on both sides, a small deck is seen. Her pointed bow is broad with an aluminum bow casting attached to it that has a lifting ring protruding from it. A long stempost is riveted to the port and starboard hull sheets; it runs aft under the boat and meets up with the keel. A towing ring protrudes from the stempost. The hull widens towards the transom stern; the boat has a soft chine and rounded port and stern quarters. The large inboard motor is painted bright lime green with red details. The propellor shaft can be seen leaving the hull bottom with the propellor and rudder easily seen at the stern when the boat is on her trailer. A sturdy and substantial splashrail is riveted to the outer hull on both sides. The hull bottom has 2 bilge keels running on either side of the keel, giving the hull additional rigidity and strength, reduce rolling in rough water, and aid in keeping the boat level when landed on shore. The hull and deck are unpainted with the exception of a thin blue line that outlines the splashrails and a thicker blue line under the splashrail that wraps around the transom. Two **ALUMA** *Craft* logos that are comprised of the name inside a white oval are painted on both the starboard and port quarters, and **WAR CANOE** is painted in blue on the transom.

Starboard Side
of the Aluma Craft *War Canoe*
and a Basic Schematic of the
Merry M-16 (Aluma Craft 1956)





Modified Motor Well with the Replacement Crosley Motor and Cover with Air Scoops, Bow, Port Splashrail, Stempost, and the Boat's Name on the Stern of the Merry M-16 Aluma Craft War Canoe



The windshield is attached to the foredeck with 4 aluminum brackets and sealed with a white rubber gasket. A cleat is affixed to the deck just aft of the bow casting on the centerline, a large horn is found port of the cleat, and a combination navigation light and pennant mast is located just forward of the windshield. The forward cockpit's padded double seat is dark blue and the steering wheel is a lighter blue. The dash has a speedometer and odometer, along with 3 knobs for controlling the lights and horn; the key is in the ignition. The aft cockpit is simply comprised of a dark blue padded double seat. Inside the engine compartment, the large inboard motor is painted bright lime green with red details. Two sets of cleats are attached to the small decking inside of the gunwale on both port and starboard; one set aft of the forward cockpit and the other lined-up with the forward edge of the engine compartment. Snaps for the boat's covers line the outer edges of both cockpits. On both bows, the vessel's registration number MN 7786 ED is seen, along with a 2009 square light blue validation sticker. The alpha sequence ED indicates that this registration number is not the original one given to *War Canoe*; ED is from the early 1980s, not 1959 when Minnesota first required boat registrations.



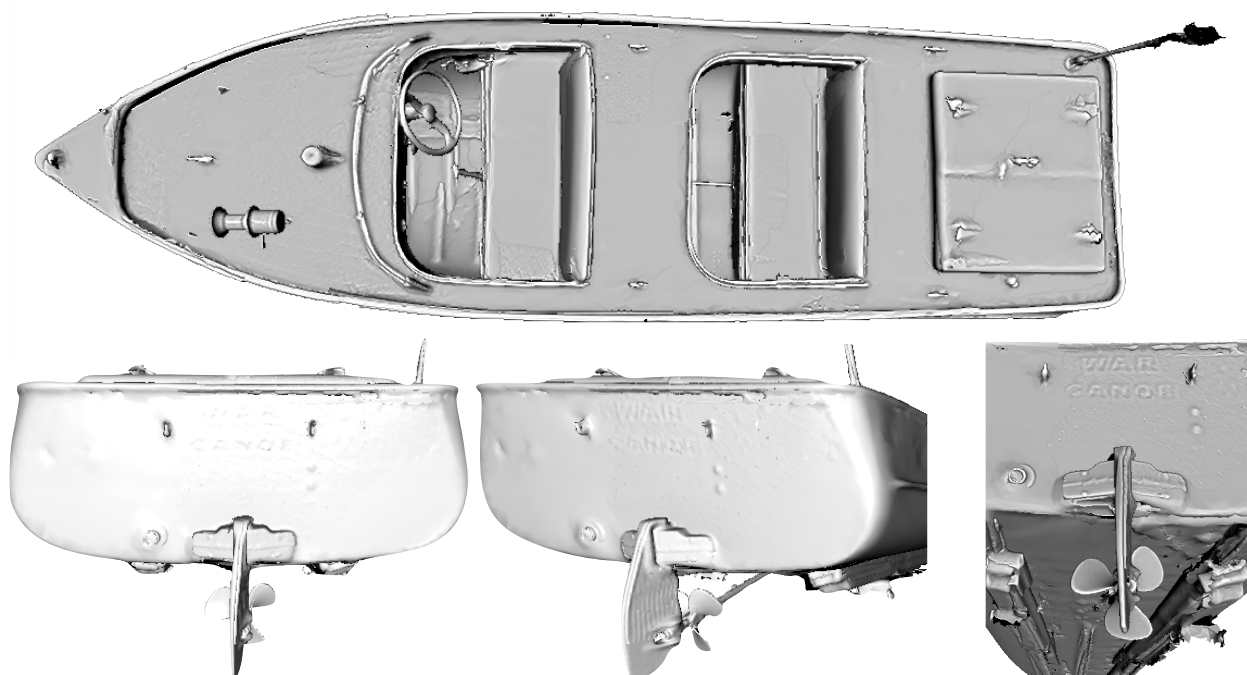
Bow Cleat,
Horn, Navigation
Light, Cockpits,
and the Transom
Stern with
the Name
War Canoe

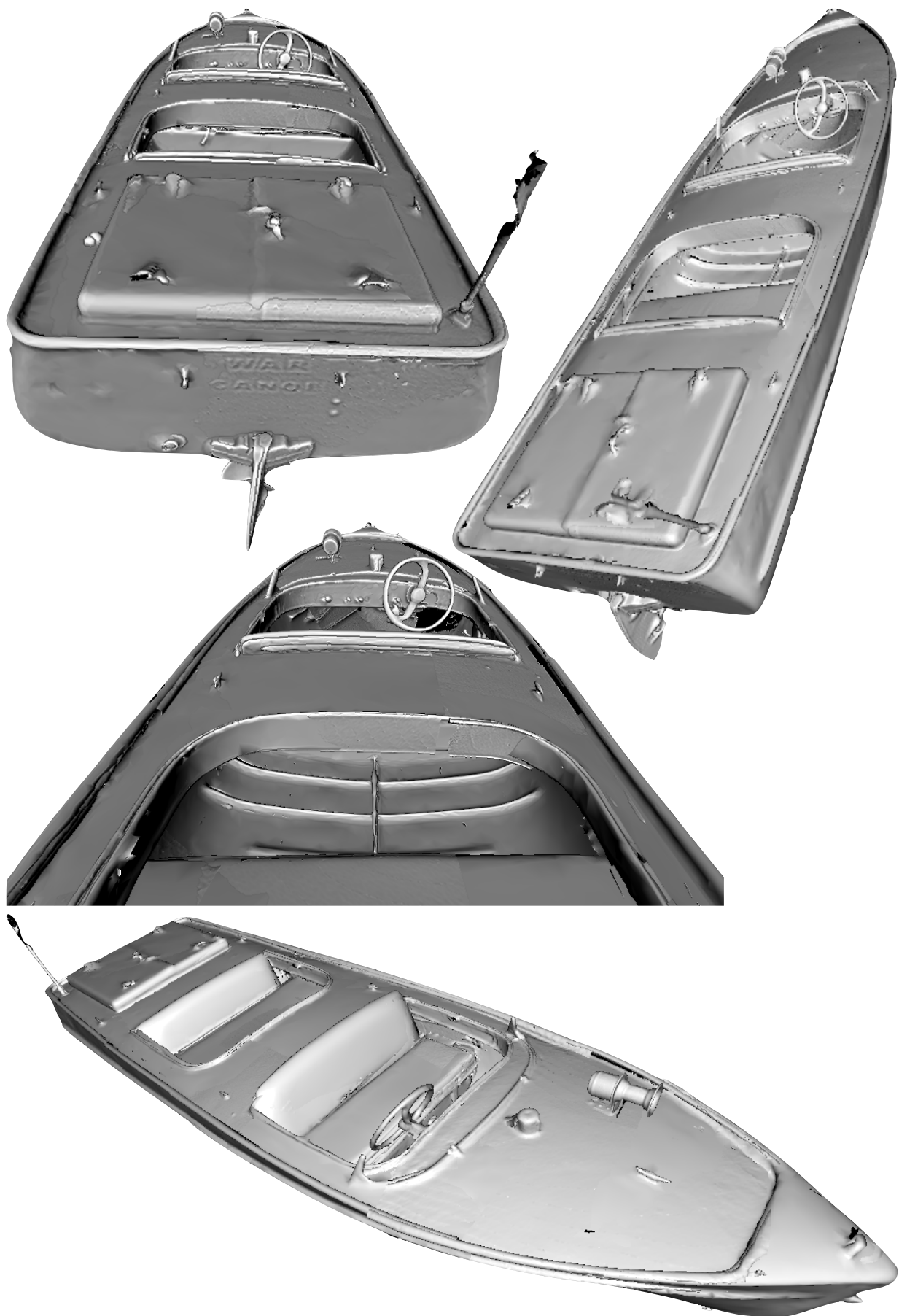


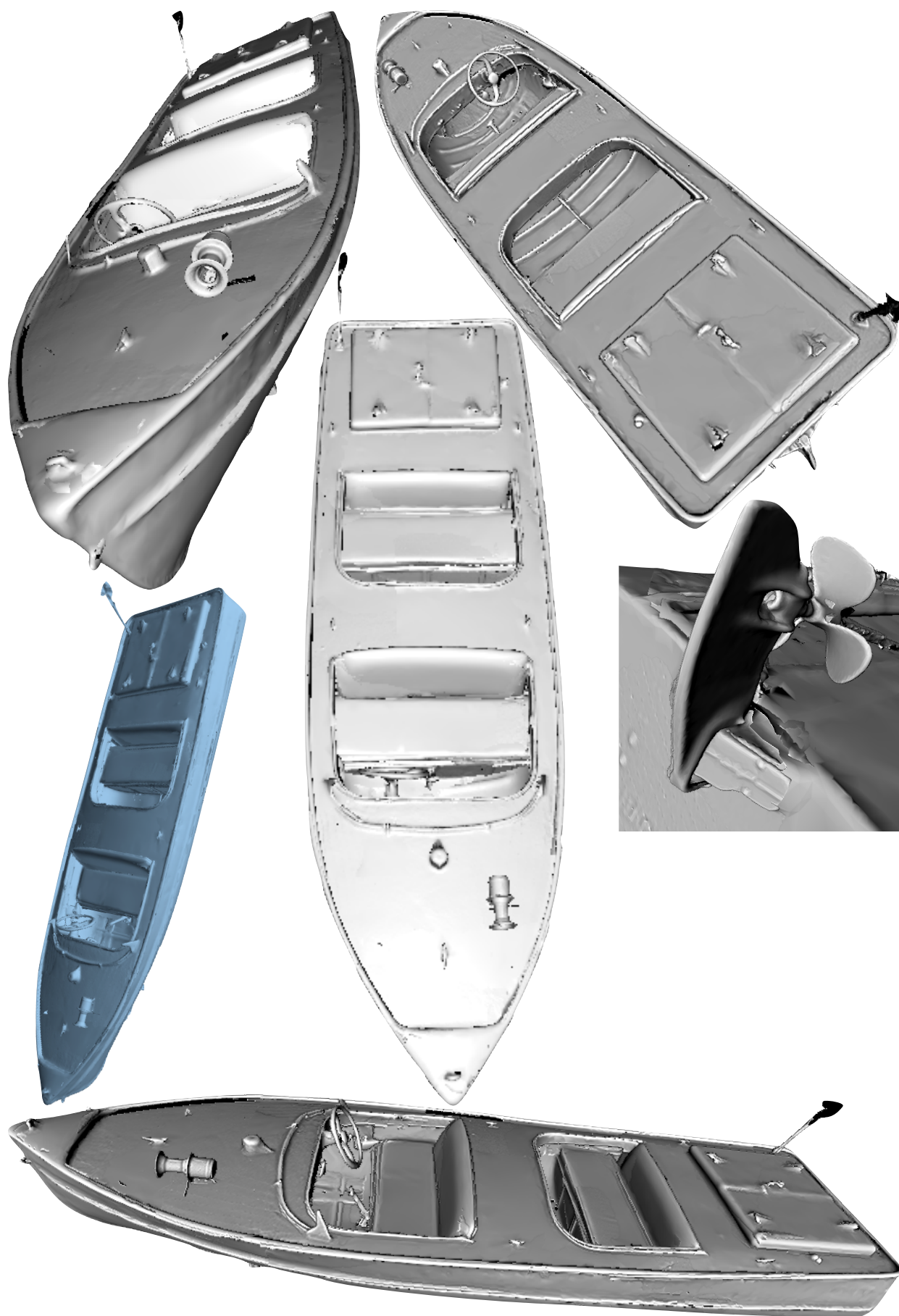
Windshield, Steering Wheel, Dashboard
with Key, 30 HP Crosley Motor in the
Modified Motor Well

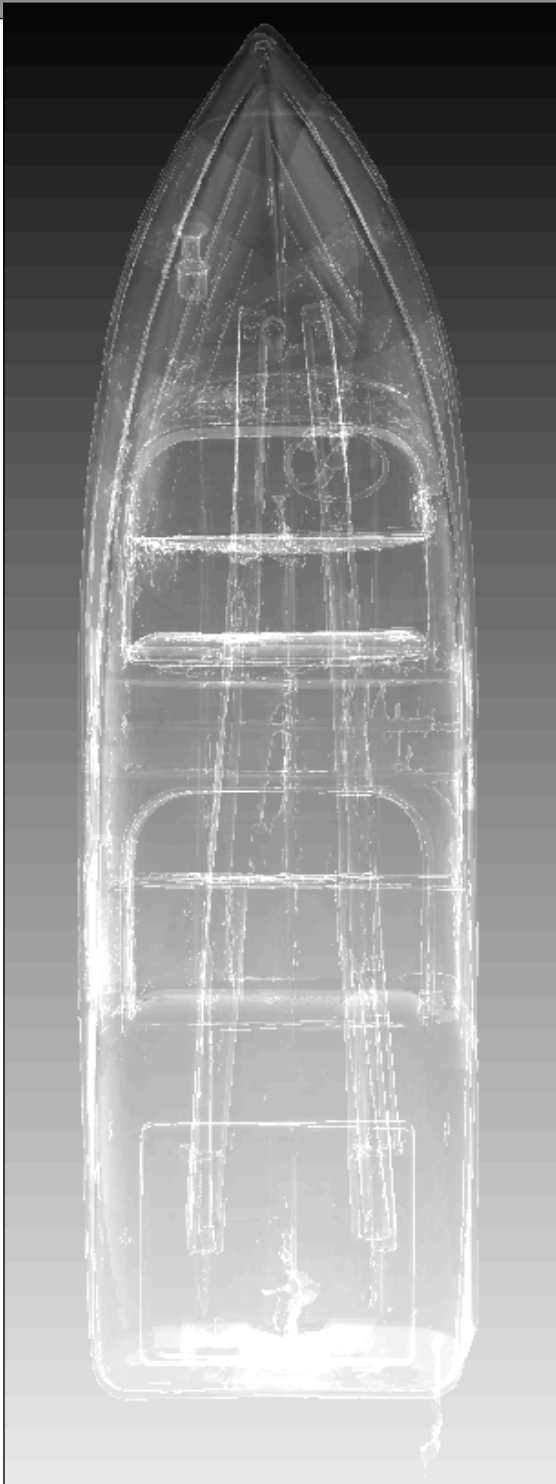
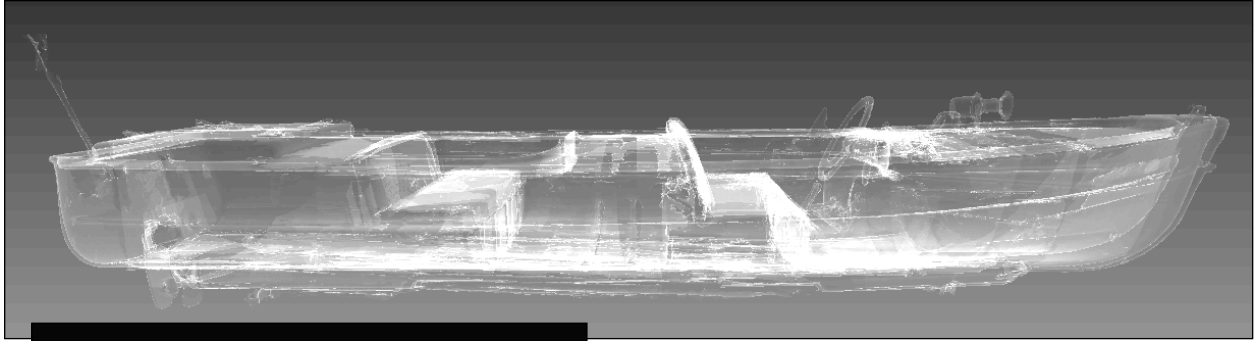


3D Model









Conclusion

War Canoe is a significant representative of our shared Minnesota Maritime History. To more fully appreciate this history, it is helpful to consider her placement within her post-World War II context. Prior to the war, wooden boat construction was the trusted norm; other forms of watercraft manufacture such as steel - and then aluminum and fiberglass - were met with suspicion. However, the transition from wooden boatbuilding to primarily aluminum and fiberglass construction for small personal watercraft sped up in the late 1940s into the early 1950s; hundreds of boatbuilding firms were established in the US that developed aluminum construction or fiberglass manufacture. Often, companies experimented with both processes and offered their customers a choice of aluminum or fiberglass, at least for a time, since many companies did not remain viable for more than a few years, particularly the smaller regional firms. Some national firms that thrived during the post-war years include Hackercraft/Hacker Boat Company, Correct Craft (now Ski Nautique), Chris Craft, Century, Higgins, and Owens, continued wooden boat construction into the decades past the war; their products included wooden runabouts, utilities, racers, cabin cruisers, and yachts. Often these wooden examples were considered to be in the 'luxury' market post-war, and the maintenance and restoration of these classic and vintage vessels remains a lucrative industry. Fortunately, Aluma-Craft was not one of the smaller or regional firms that folded due to intense competition, and the company produced boats that were in great demand due to the amount of disposable income available post-war because of the booming economy.

The preservation and survival of *War Canoe* as part of Minnesota's Maritime History is important because of her double-cockpit design and the low production of this Aluma Craft model over a 2-year period in the mid-1950s. According to Aluma Craft historical accounts, the Merry M-16 was popular with consumers. However, MHM suspects the company suspended Merry M-16 as their 'luxury' offering due to the planned introduction of Aluma Glass fiberglass models in 1958 - the Merrie Maid and Merrie Lady - as a way to appeal to a wider audience that were accepting of the use of fiberglass in boat manufacture. Additionally, the labor cost in producing molded fiberglass boats is much lower when compared to riveted aluminum watercraft construction. Therefore, Aluma Craft recognized the value to their bottom line in diversifying their offerings in both aluminum and fiberglass for the late 1950s American consumer.

Few examples of the Aluma Craft Merry M-16 survive and as an early aluminum 'luxury' personal watercraft, she is unique in the maritime historical record. MHM staff have produced quality digital 3D models for projects that have utilized iPads with an attached scanner to document rare Minnesota boats and canoes. Additionally, MHM attempted to create a 3D model of *War Canoe* using photogrammetry, but the software had difficulty processing the still and video data due to the shiny nature of the boat; useless models were produced and photogrammetry was not used in the final product of this project. The 3D scanning and documentation of historic watercraft assists underwater archaeologists in identifying wrecks of the same or similar manufacture on the bottom of Minnesota's lakes and rivers. Beyond the simple identification of wrecks, the files created during 3D scanning and photogrammetry will record attributes that are often missing from archaeological sites, that are concealed by silt or zebra mussels, or that

cannot be discerned due to low visibility; this aspect of 3D scanning of rare Minnesota watercraft is invaluable when conducting wreck research. Additionally, the 3D scanning of complete boats and specific components is useful for the preservation, conservation, and restoration of other examples of these boats that exist in other collections or owned by individuals, including those in other states. Also, printing examples of the scanned boats in 3D miniature can augment the archival record of each object and can be used as a teaching tool as part of a maritime curricula. Lastly, the documentation and 3D scanning of historic boats is a form of preservation; if *War Canoe* is damaged or destroyed, at the very least the data from this project can reproduce the watercraft virtually and as a small model. The continued curation and study of these rare examples of Minnesota craftsmanship creates a maritime legacy for the benefit of future generations.

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